



Medical Marijuana
Awareness Webinar

GASTROINTESTINAL DISORDERS & MEDICAL MARIJUANA

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WELCOME!

Setting Boundaries & Disclaimers

The purpose of this group is to provide a safe, supportive and judgment free zone where we can advocate for and discuss medical cannabis, as well as local and state resources.

It is best to always discuss with your physician before making any medical decisions about your health. The goal of this group is to engage with the community and to help educate Medical Cannabis through discussion.

**No matter our background,
we are all coming together as medical cannabis patients,
students, advocates, and researchers.**

WHAT ARE GASTROINTESTINAL DISORDERS?

ONE OUT OF FIVE AMERICANS SUFFER FROM GI DISORDERS

- IBS- Irritable Bowel Syndrome
- GERD -gastroesophageal reflux disease
- IBD - Inflammatory Bowel Disease which includes both
 - Ulcerative Colitis and
 - Crohn's Disease



ENS

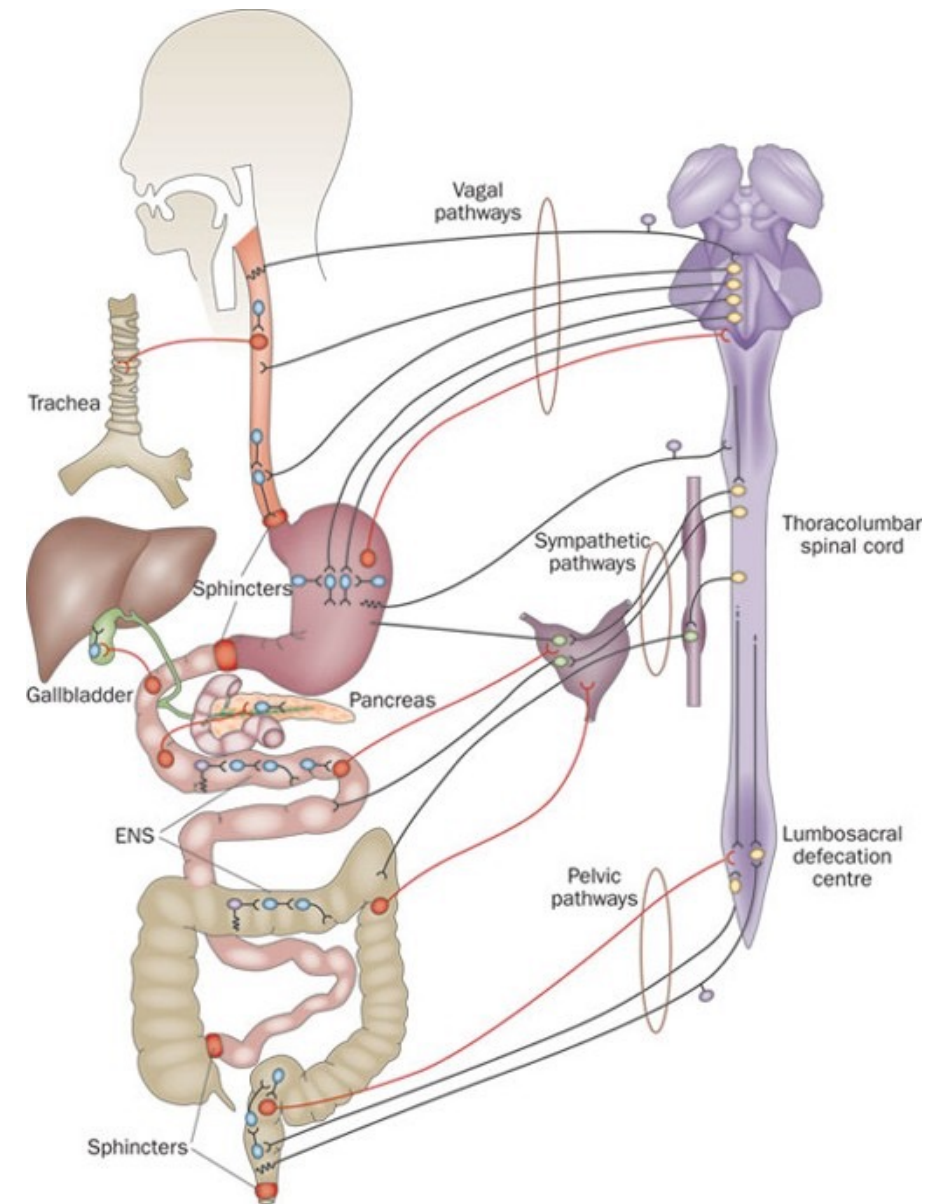
Enteric Nervous System

The **enteric nervous system (ENS)** or intrinsic nervous system is one of the main divisions of the autonomic nervous system (ANS) and consists of a mesh-like system of neurons that governs the function of the gastrointestinal tract.

Key Element: Inflammatory pain

Conditions include:

- Constipation,
- Irritable bowel syndrome,
- Hemorrhoids,
- Anal fissures,
- Perianal abscesses,
- Anal fistulas,
- Perianal infections,
- Diverticular diseases,
- Colitis,
- Colon polyps and
- Cancer



EFFICACY FOR TREATMENT OF GI SYMPTOMS

The good news

“for those dealing with digestive disorders is that marijuana can be a uniquely beneficial solution. This wonder plant promotes gut health through natural and effective means.”

. . . April 1, 2020 - Dr. Joseph Rosado, MD, M.B.A, Chief Medical Officer

Research Articles on Cannabis and Gastrointestinal Disorders

- **Pertwee, R. G. (2001).** Cannabinoids and the gastrointestinal tract. *Gut*, 48(6), 859-867.
- **Di Carlo, G., & Izzo, A. A. (2003).** Cannabinoids for gastrointestinal diseases: potential therapeutic applications. *Expert Opin Investig Drugs*, 12(1), 39-49.
- **Coutts, A. A., & Izzo, A. A. (2004).** The gastrointestinal pharmacology of cannabinoids: an update. *Curr Opin Pharmacol*, 4(6), 572-579.
- **Russo, E. B. (2004).** Clinical endocannabinoid deficiency (CECD): Can this concept explain therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions? *Neuroendocrinol Lett*, 25(1-2), 31-39.
- **Gabbay, E., Avraham, Y., Ilan, Y., Israeli, E., & Berry, E. M. (2005).** Endocannabinoids and liver disease—review. *Liver Int*, 25(5), 921-926.
- **Wright, K., Rooney, N., Feeney, M., Tate, J., Robertson, D., Welham, M., et al. (2005).** Differential expression of cannabinoid receptors in the human colon: cannabinoids promote epithelial wound healing. *Gastroenterology*, 129, 437-453.
- **Massa, F., & Monory, K. (2006).** Endocannabinoids and the gastrointestinal tract. *J Endocrinol Invest*, 29(3 Suppl), 47-57.
- **Sylvestre, D. L., Clements, B. J., & Malibu, Y. (2006).** Cannabis use improves retention and virological outcomes in patients treated for hepatitis C. *Eur J Gastroenterol Hepatol*, 18(10), 1057-1063.

MORE RECENT STUDIES

2007: Ganier, J.J, et al.

Herbal medicine for low back pain: A Cochrane review

2009: Sumner Burstein & Robert Zurier

Cannabinoids, endocannabinoids and related analogs in inflammation

2009: Conte, et al.

Cannabinoid-induced effects on the nociceptive system: A neurophysiological study in patients with secondary progressive multiple sclerosis

2009: Eva Martin-Sanchez, MSc, et al.

Systematic Review and Meta-analysis of Cannabis Treatment for Chronic Pain

2015: Wallace MS, et al.

Efficacy of Inhaled Cannabis on Painful Diabetic Neuropathy

2015: Kevin Hill, MD, MHS: A Clinical Review

Medical Marijuana for Treatment of Chronic Pain & Other Medical and Psychiatric Problems

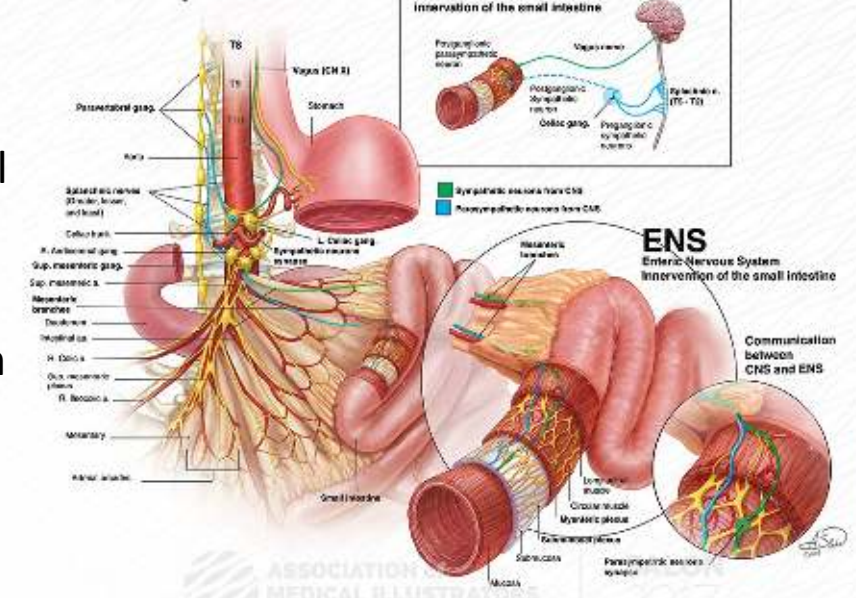
2016: Modern Health Concepts. Pg. 147-150

The Medical Use of Cannabis in Neuropathies

2017: Hill, K.P., et al.

Cannabis and Pain: A Clinical Review. Cannabis and Cannabinoid Research

INNERVATION OF THE SMALL INTESTINE by the Central and Enteric Nervous Systems



THE ENDOCANNABINOID SYSTEM



THE HUMAN ENDOCANNABINOID SYSTEM

CBD, CBN and THC fit like lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological process affecting pain modulation, memory and appetite plus anti-inflammatory effects and other immune system components serve distinct

CB1 receptors are primarily found in the brain and central nervous system, and to a lesser

Receptors are found on cell surfaces

THE HUMAN ENDOCANNABINOID SYSTEM
CBD, CBN and THC fit like lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological process affecting pain modulation, memory and appetite plus anti-inflammatory effects and other immune system responses. The endocannabinoid system comprises two types of receptors, CB1 and CB2, which serve distinct functions in human health and well-being.



CB2 receptors are mostly in the peripheral organs especially cells associated with the immune system.



HOW CANNABIS WORKS



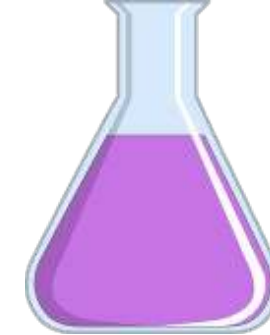
Endocannabinoid's
[Brain derived]

Foods: Omega 3s - Omega 6s
Anandamide [AEA]



Phytocannabinoids
[Plant derived]

Buds, Tinctures, Extracts
THC, CBD, CBN, etc



Synthetic Cannabinoids
[Pharmaceutical Labs]

Patent Synthesized Compound
THC Only - Marinol

Endocannabinoid
[Brain receptors]
CB1, CB2, etc

The endocannabinoid system [ECS] regulates a variety of physiological processes including appetite, pain and pleasure sensation, immune system, mood and memory.



CANNABIS HELPS *YOUR* BODY PRODUCE IT'S OWN MEDICINE

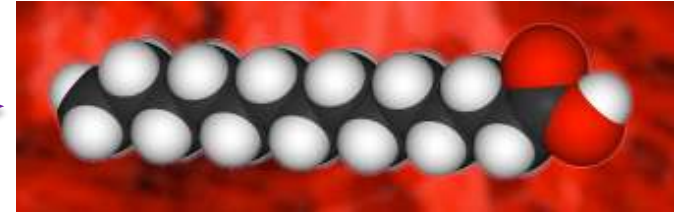
Endocannabinoids



Endocannabinoid's
brain derived



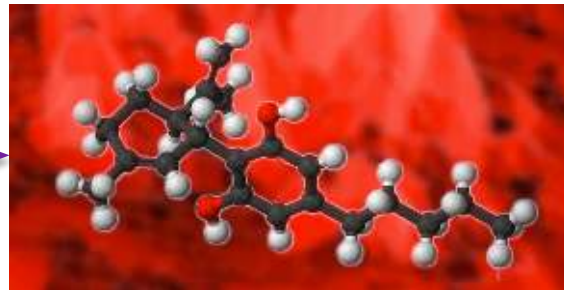
Phytocannabinoids
plant derived



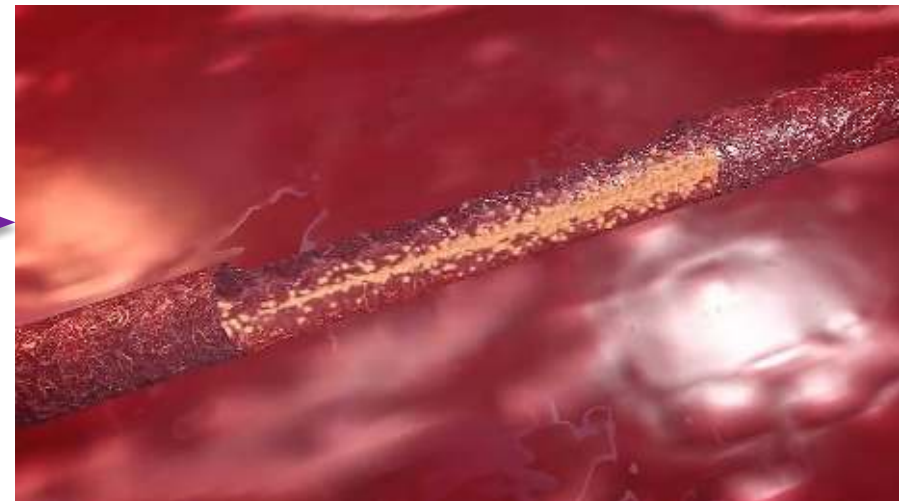
FATTY ACIDS



NEURONS



LONG CHAIN FATTY
ACIDS



THE BODY PRODUCING AND
DISTRIBUTING ENDOCANNABINOID'S



WHAT IS MEDICAL CANNABIS/MARIJUANA ?

CBD - Cannabidiol

Non-Psychoactive cannabis component – Also found in Hemp

THC - Tetrahydrocannabinidiol

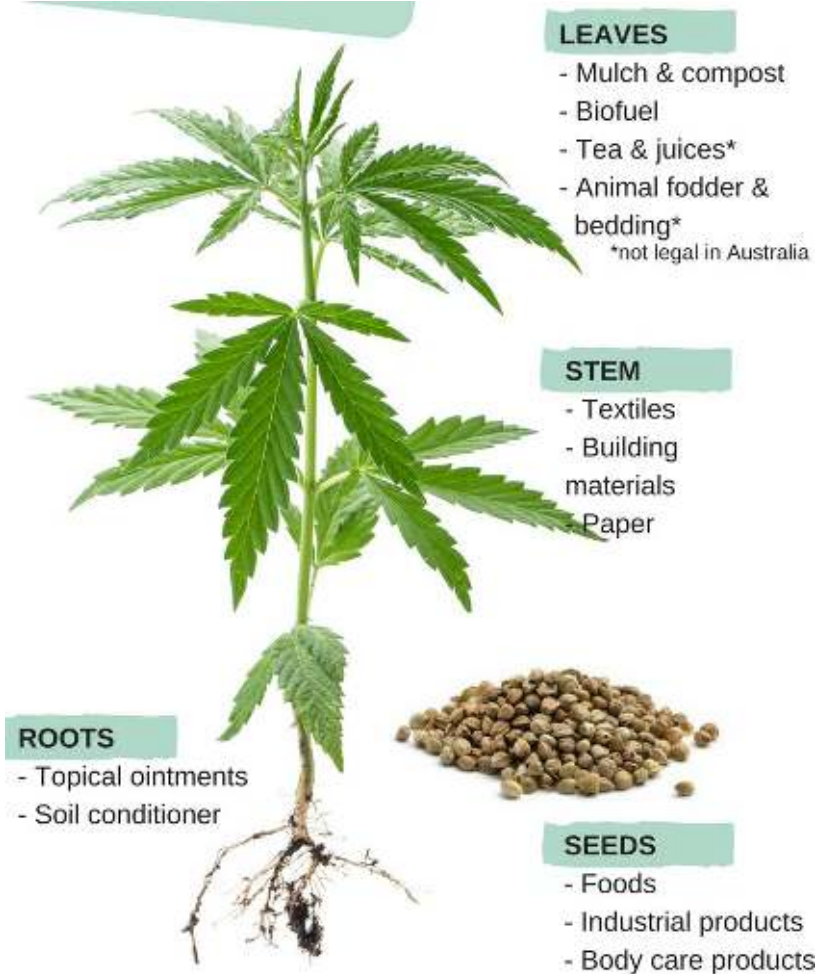
Psychoactive cannabis component



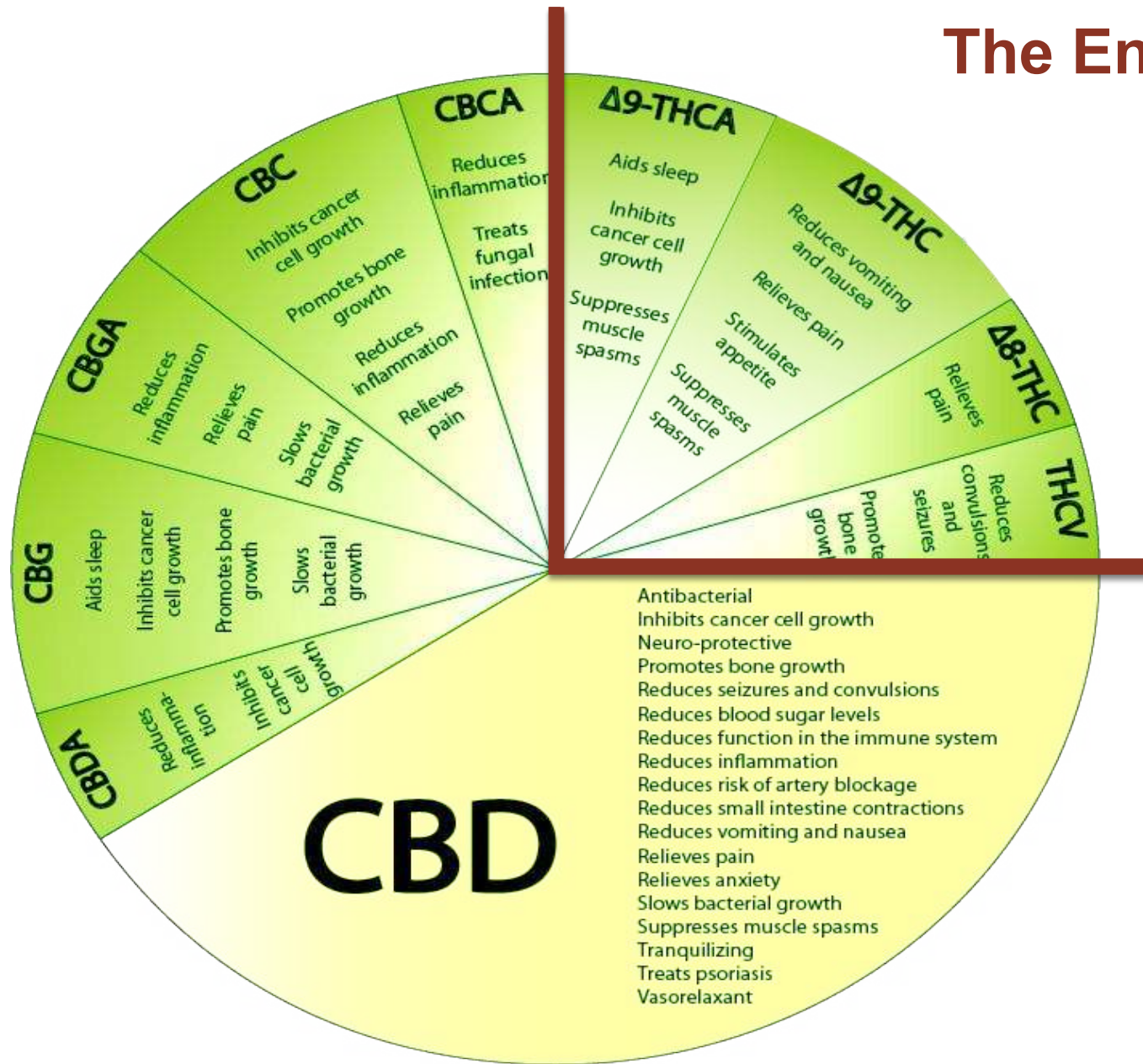
THE PLANT - HEMP vs MARIJUANA

HEMP *CANNABIS SATIVA*

MARIJUANA *CANNABIS INDICA*

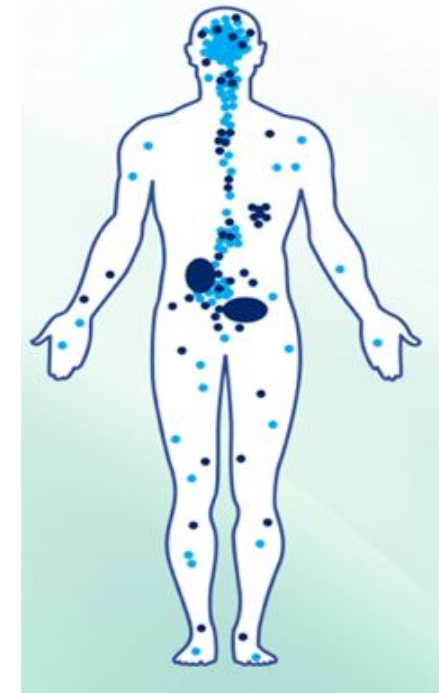


CBD in Hemp & Cannabis



The Entourage Effect

THC



Cannabinoids

- Narrow leaves

Terpenes

- Better suited for colder climates

Your Biology, Dosing, Consumption Method

Sativ



Best Marijuana Strains for Digestive Disorders

Abdominal Cramping & Diarrhea

- Honey Bananas (hybrid)
- Black Diesel (sativa)
- Grape Kush (hybrid)
- Jean Guy (sativa-dominant hybrid)

DEPRESSION & ANXIETY

- Sour Tangie (sativa)
- LA Kush (hybrid)
- Caramelicious (hybrid)
- Chocolate Chunk (indica)
- Pineapple Express (hybrid)

LOSS OF APPETITE

- Ice (hybrid)
- Sugar Kush (indica)
- Purple Candy (hybrid)
- Girl Scout Cookies (hybrid)
- Candyland (hybrid)

NAUSEA & VOMITING

- King's Kush (indica)
- Orange Haze (hybrid)
- Allen Wrench (sativa)
- Northern Lights (indica)
- Lavender (hybrid)
- White Fire OG (hybrid)

FATIGUE

- Lemon Jack (sativa)
- Super Silver Haze (sativa)
- Jack Herer (sativa)
- Green Crack (sativa)
- Laughing Buddha (sativa-dominant hybrid)



WHAT ARE TERPENES?

- Terpenes are the most common plant chemicals in nature.
- Found in flowers, spices, fruits, vegetables and essential oils

- ➔ Endocannabinoid System - Highway
- ➔ Anandamide - Driver
- ➔ Cannabinoid - Passenger (CBD/THC)
- ➔ Terpenes navigate/shapes the Cannabinoid journey like a GPS

GUIDE TO TERPENES

	Aroma	Vaporizes at	Found in	Strains
PNE α-PINENE	 Pine	311°F (155°C)	Pine Needles, Rosemary, Basil, Parsley, Dill	<div>Indica Pk Purple Kush</div> <div>Sativa Bay Bay Dream</div> <div>Hybrid Ak AK-47</div>
MYR MYRCENE	   Cloves Earthy Herbal	332°F (167°C)	Mango, Lemongrass, Thyme, Hops	<div>Indica Gdp Granddaddy Purple</div> <div>Sativa Am Amnesia</div> <div>Hybrid Tw Tremorack</div>
LME LIMONENE	 Citrus	348°F (176°C)	Fruit Rinds, Rosemary, Juniper, Peppermint	<div>Indica Hk Hindu Kush</div> <div>Sativa Lmg Lemon G</div> <div>Hybrid Stb Strawberry Banana</div>
CYE CARYOPHYLLENE	   Pepper Spicy Woody Cloves	266°F (130°C)	Black Pepper, Cloves, Cinnamon	<div>Hybrid Fog Pine OG</div> <div>Hybrid Gg4 GG4</div> <div>Hybrid Gsc GSC</div>
LNL LINALOOL	 Floral	388°F (198°C)	Lavender	<div>Indica Kos Kosher Kush</div> <div>Indica Rom Romanian</div> <div>Hybrid Sk Skunk Kush</div>
HUM HUMULENE	  Woody Earthy	222°F (106°C)	Hops, Coriander, Cloves, Basil	<div>Indica Bcg Black Cherry OG</div> <div>Indica Ds Death Star</div> <div>Hybrid Gsc GSC</div>
OCM OCIMENE	   Sweet Herbal Woody	122°F (50°C)	Mint, Parsley, Pepper, Basil, Mangoes, Orchids, Kumquats	<div>Indica Sen Sensi Star</div> <div>Sativa Dp Durban Poison</div> <div>Hybrid Svb Silver Bubba</div>
TPE TERPINOLENE	   Pine Floral Herbal	366°F (186°C)	Nutmeg, Tea Tree, Conifers, Apples, Cumin, Lilacs	<div>Hybrid Dt Dutch Treat</div> <div>Sativa Gth Ghost Train Haze</div> <div>Hybrid Ago Agent Orange</div>

CARYOPHYLLENE



AROMA

Pepper
Spicy
Woody
Cloves



VAPORIZES AT

266°F (130°C)



POTENTIAL EFFECTS

Stress Relief



POTENTIAL MEDICAL VALUE

Treatment of:

- Pain
- Anxiety
- Depression
- Ulcers



ALSO FOUND IN

Black Pepper
Cloves
Cinnamon

MYRCENE



AROMA

Cardamom
Cloves
Musky
Earthy
Herbal



VAPORIZES AT

332°F (167°C)



POTENTIAL EFFECTS

Sedating
"Couchlock"
Relaxing



POTENTIAL MEDICAL VALUE

Antioxidant
Treatment of:

- Insomnia
- Pain
- Inflammation



ALSO FOUND IN

Mango
Lemongrass
Thyme
Hops

LIMONENE



AROMA

Citrus



VAPORIZES AT

348°F (176°C)



POTENTIAL MEDICAL VALUE

Treatment of:

- Anxiety
- Depression
- Inflammation
- Pain
- Cancer



POTENTIAL EFFECTS

Elevated Mood
Stress Relief



ALSO FOUND IN

Fruit Rinds
Rosemary
Juniper



LINALOOL



 **AROMA**
Floral

 **VAPORIZES AT**
388°F (198°C)

 **POTENTIAL
MEDICAL VALUE**

Treatment of:

- Anxiety
- Depression
- Insomnia
- Pain
- Inflammation
- Neurodegeneration

 **POTENTIAL
EFFECTS**

Mood Enhancement
Sedation

+ ALSO FOUND IN
Lavender



FORMS

- *Inhalation Vape Pens*
- *Capsules*
- *Topical's*
- *Sprays*
- *Flower*
- *Crumble & Shatter*
- *Suppositories*
- *Edibles*



STANDARD DOSING

FORM	TIME TO WORK	EFFECTIVENESS	
SUBLINGUAL DROPS/TINCTURE	15-40 Min	4-6 Hours	Taking cannabis in through the mouth under your tongue, absorbs via the digestive system or blood vessels in the mucous membranes in the mouth.
VAPE PEN	Almost Immediately	2-4 Hours	Electronic vaporizing device Inhaling through the lungs
CAPSULES	30 min - 2 hours	5-8 Hours	When taking cannabis in through the mouth, it enters the bloodstream after being digested or broken down in the stomach and absorbed into the digestive system.
EDIBLES	15-40 Min	4-6 Hours	Gummies, brownies,dots, cookies, et al
TOPICALS	Almost immediately	1-2 Hours	A topical medicine is applied to the skin directly 'on top' of the place where it is needed.
TRANSDERMAL PATCH	10 min - 1 Hour	8 - 72 Hours	A topical medicine is applied to the skin directly 'on top' near the neck, inside of legs, top of hands/feet, back of neck
SPRAY	Almost Immediately	2-4 Hours	Absorbs via the digestive system or blood vessels in the mucous membranes in the mouth.
FLOWER	Almost Immediately	1-5 Hours	REQUIRES A FL STATE FORM Inhaling through the lungs 3.5oz/35 days: 4oz in possession
CRUMBLE SHATTER	Almost Immediately	1-6 Hours	Inhaling through the lungs





TruNano Technology

TruNano Ratio Tincture is made with our nano-emulsion technology

Achieved through process of sonification

Quicker onset

The bioavailability of these products are over 90%

Acts like a water-soluble molecule

1:8, 8:1 CBD:THC \$55

Trupowder 5mg scoop, 200mg total, \$50

TruTincture Drops

- 10mg each

- 10 count

- \$20



Delta 8 Products



- **TruClear:** 1:1 (Delta 8: Delta 9)
- **TruPods:** 1:1:1 (Delta 8: Delta 9: CBD),
1:1 (CBD: Delta 8),
1:1 (Delta 8: Delta 9)
- More expansion in this line



BALANCED LIVING: A SENSE OF RESTORATION & CONTROL

- Talk Therapies such as CBT with PE
- Animal or Music Therapies
- Lifestyle and dietary changes
- Meditation and Mindfulness
- Basic Self-Care



GROUP DISCUSSION

RESOURCES

Cannabis and the Endocannabinoid System. (2017). Retrieved from YouTube:
<https://www.youtube.com/watch?v=Vtc11kRinf4>

Eisenberg, E. (Technion - Israel Institute of Technology). Medical Cannabis for Pain Control.

Furness JB, Callaghan BP, Rivera LR, & Cho HJ. (2014). The enteric nervous system and gastrointestinal innervation: integrated local and central control. *Advanced in Experimental Medicine and Biology*, 39-71.

Gastrointestinal Disorders. (2016). Retrieved from My Cleveland Clinic:
<https://my.clevelandclinic.org/health/articles/7040-gastrointestinal-disorders>

J. Manzanares, M. D. Julian, & A. Carrascosa. (2006). Role of the Cannabinoid System in Pain Control and Therapeutic Implications for the Management of Acute and Chronic Pain. *Current Neuropharmacology*, 239-257.

Josh Kaplan & Nick Jikomas. (2019, May 2). *What Is Myrcene and What Does This Cannabis Terpene Do?*
Retrieved from Leafly: <https://www.leafly.com/news/science-tech/myrcene-terpene>

Leonard Leilow & Juliana Birnbaum. (2017). PTSD. In L. L. Birnbaum, *CBD: A Practical Guide to Medical Cannabis* (pp. 154-157). Berkeley: North Atlantic Books.

Miles, H. (2018). *15 Terpenes in Cannabis Explained*. Retrieved from CannaCon:
<https://cannacon.org/15-terpenes-cannabis-explained/>

Please send your questions using the Q&A button at the bottom center of your screen. The speakers will answer after the presentation. The Q&A feature is public. Both panelists and attendees will see your question.